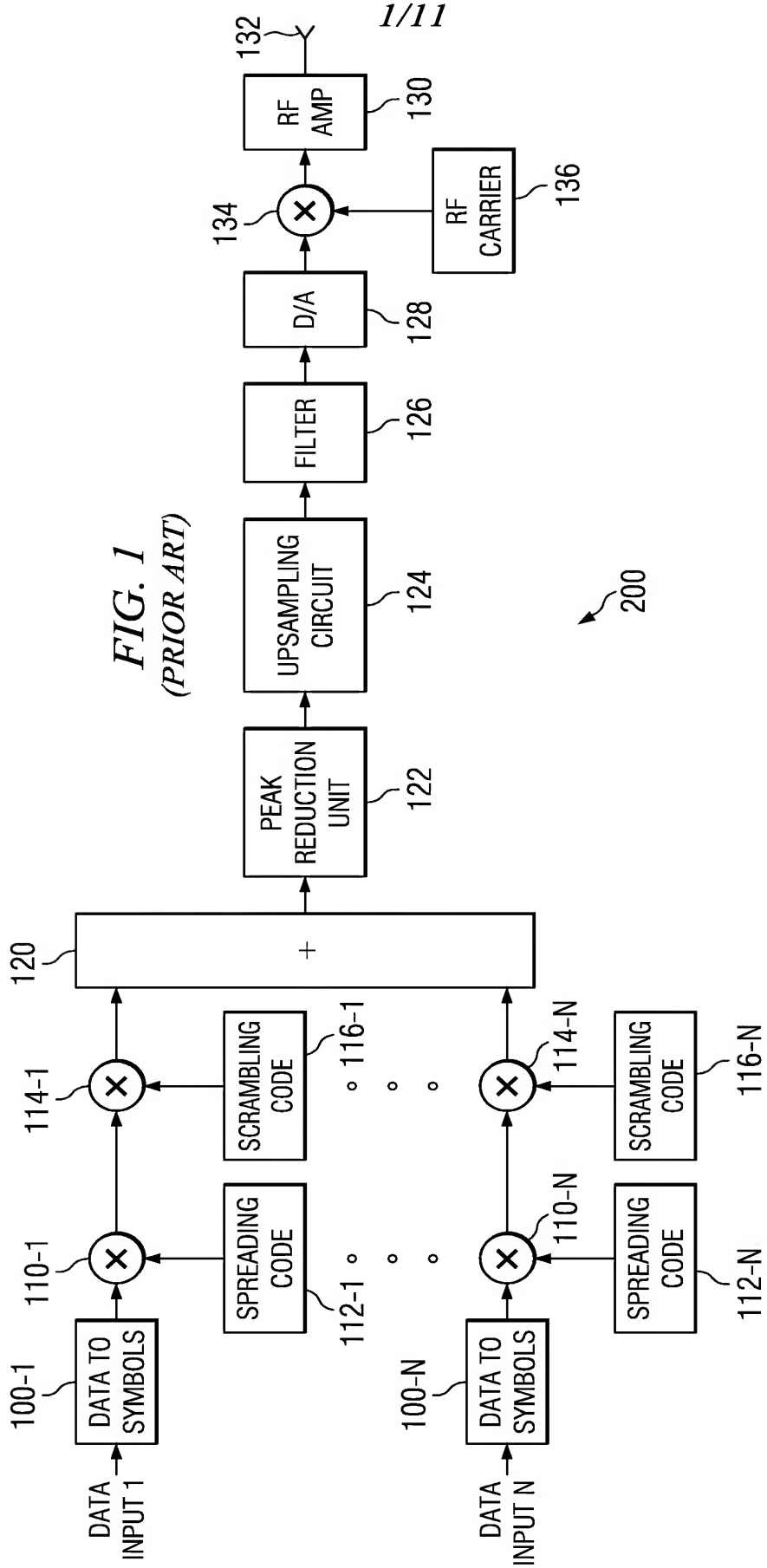


FIG. 1
(PRIOR ART)

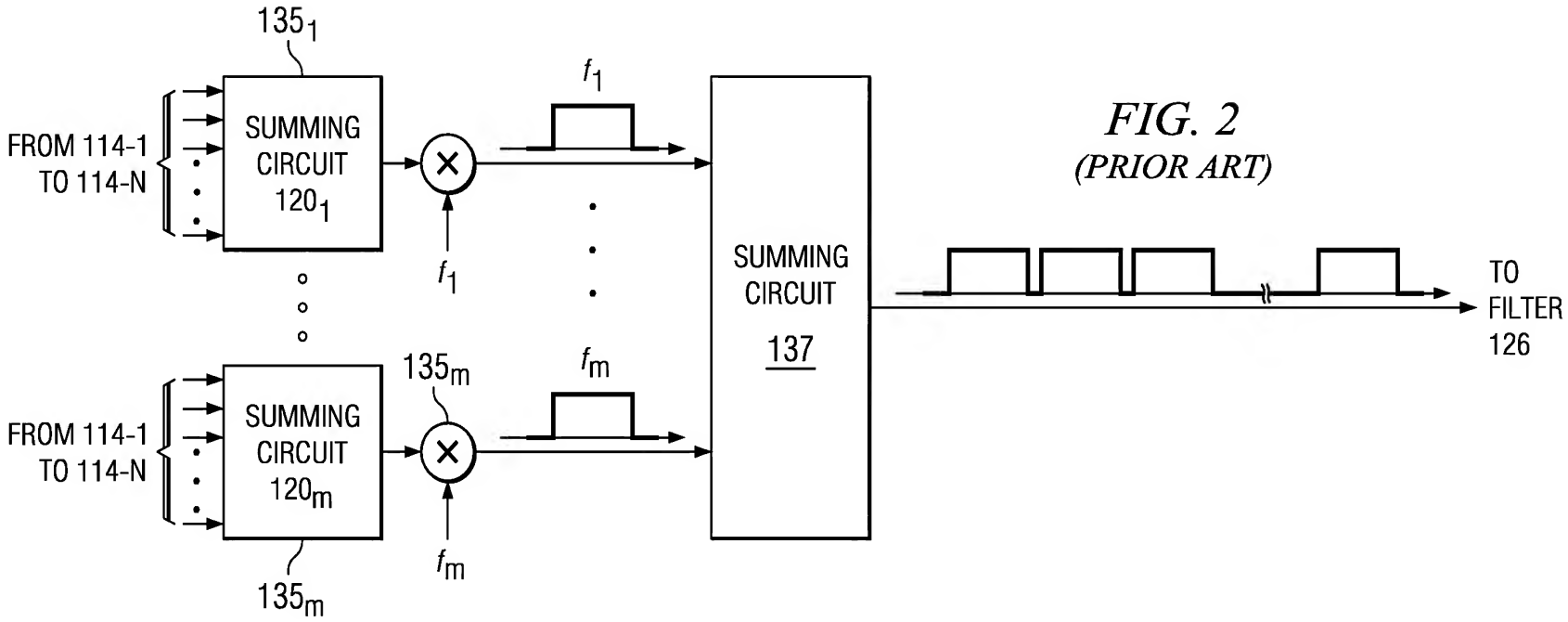


FIG. 2
(PRIOR ART)

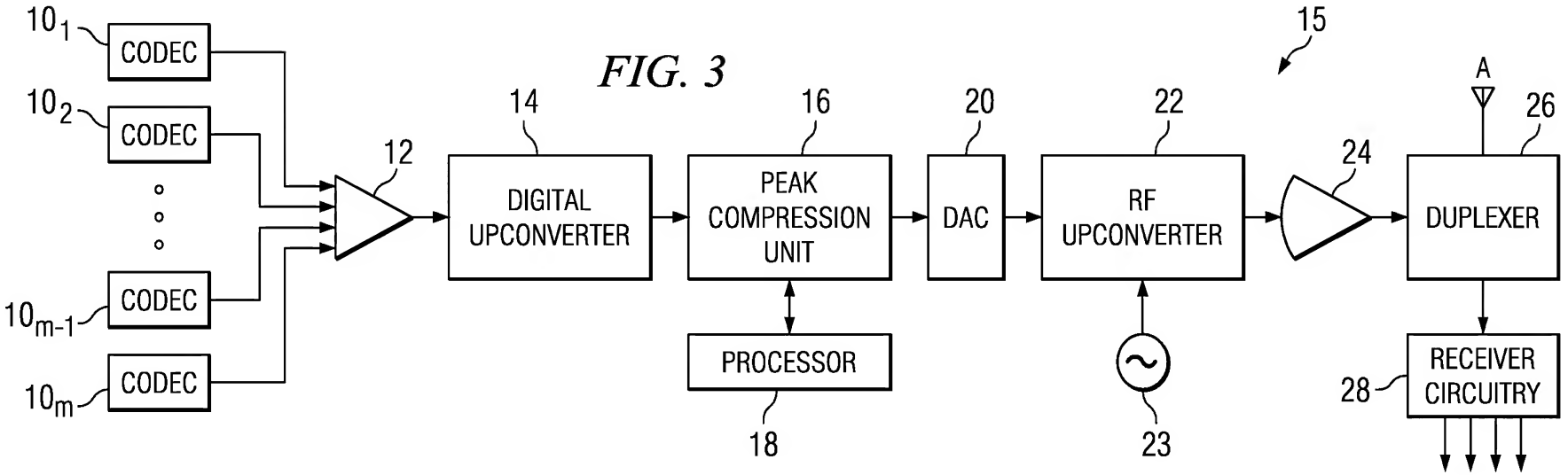


FIG. 3

FIG. 4

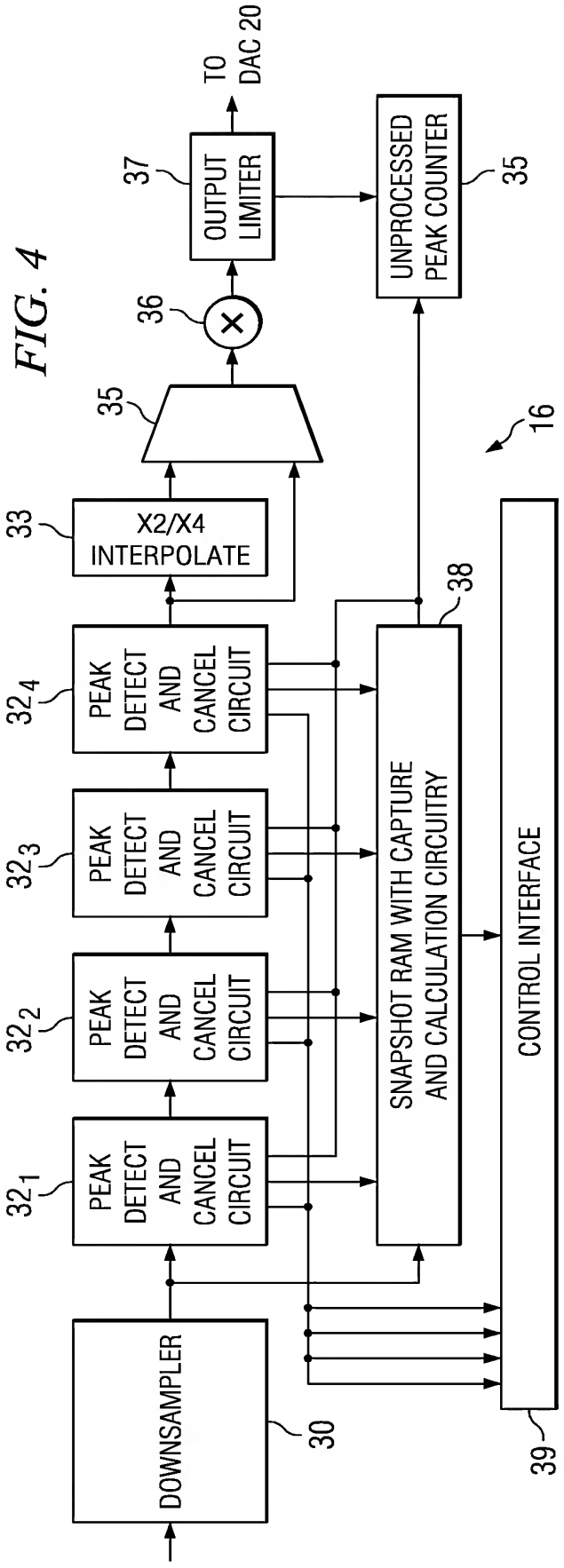
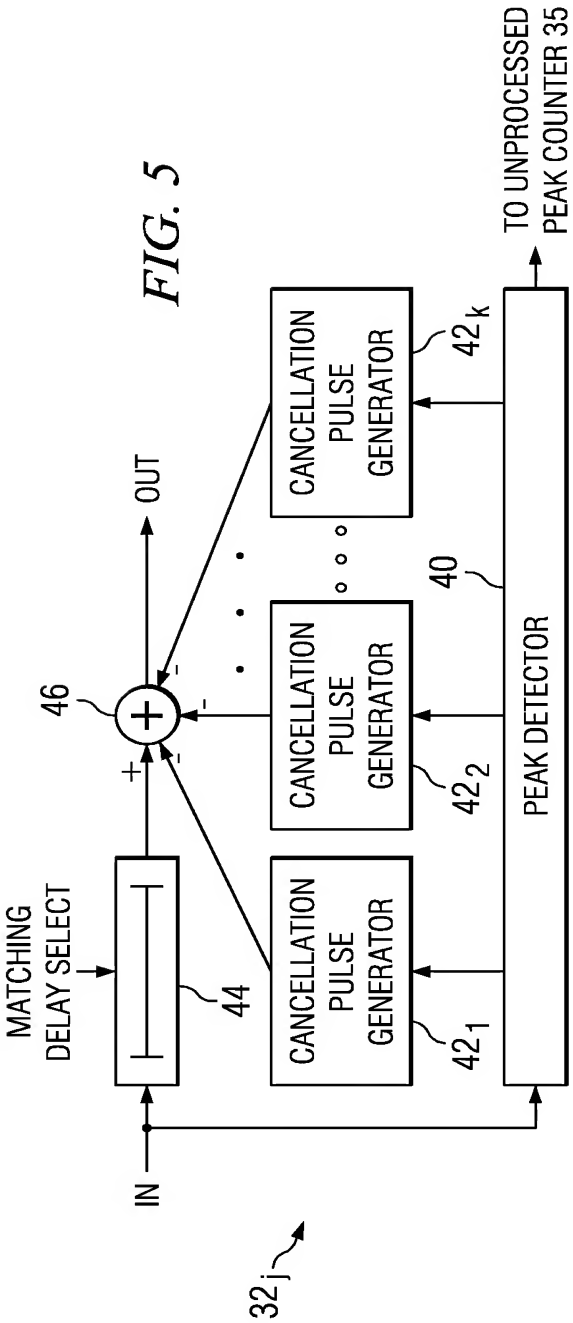

DOWNSAMPLER
30
PEAK DETECT AND CANCEL CIRCUIT
32 1
PEAK DETECT AND CANCEL CIRCUIT
32 2
PEAK DETECT AND CANCEL CIRCUIT
32 3
PEAK DETECT AND CANCEL CIRCUIT
32 4
X2/X4 INTERPOLATE
33
35
36
OUTPUT LIMITER
37
TO DAC 20
UNPROCESSED PEAK COUNTER
35
SNAPSHOT RAM WITH CAPTURE AND CALCULATION CIRCUITRY
38
CONTROL INTERFACE
39
16

FIG. 5


IN
MATCHING DELAY SELECT
44
46
+
-
OUT
CANCELLATION PULSE GENERATOR
42 1
CANCELLATION PULSE GENERATOR
42 2
CANCELLATION PULSE GENERATOR
42 k
PEAK DETECTOR
40
TO UNPROCESSED PEAK COUNTER 35
32 j

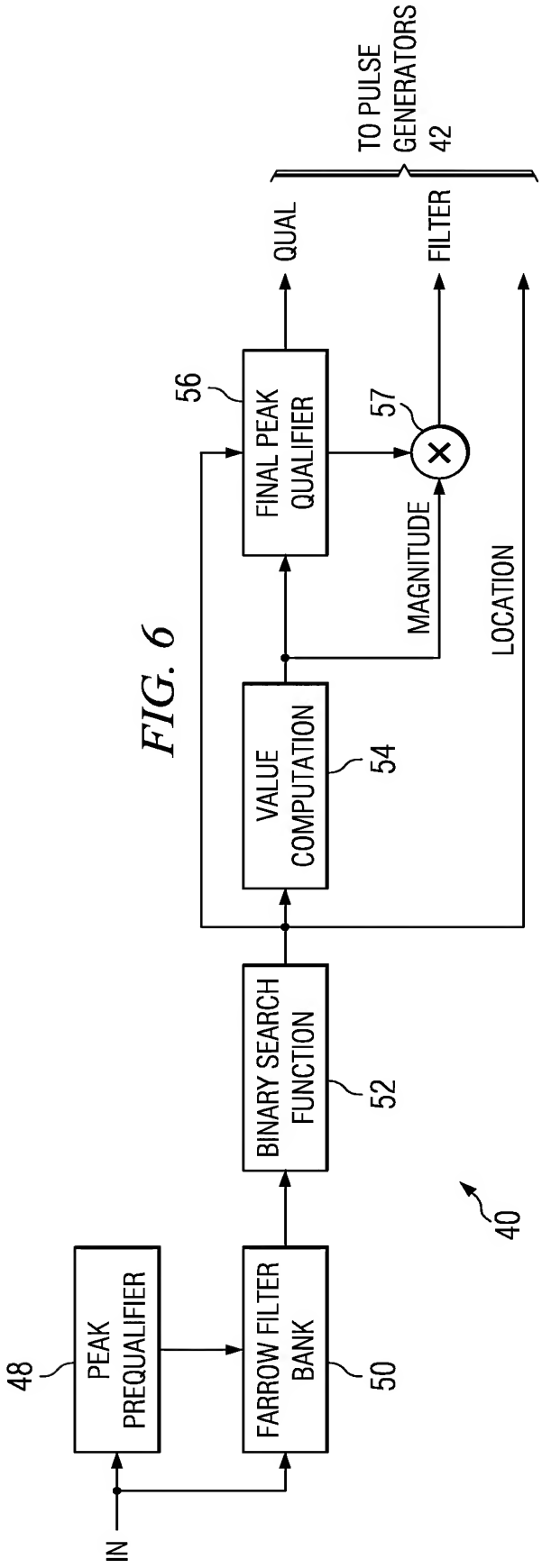

IN
PEAK PREQUALIFIER
48
FARROW FILTER BANK
50
BINARY SEARCH FUNCTION
52
VALUE COMPUTATION
54
FINAL PEAK QUALIFIER
56
57
MAGNITUDE
LOCATION
QUAL
FILTER
TO PULSE GENERATORS 42
40

FIG. 6

FIG. 7a

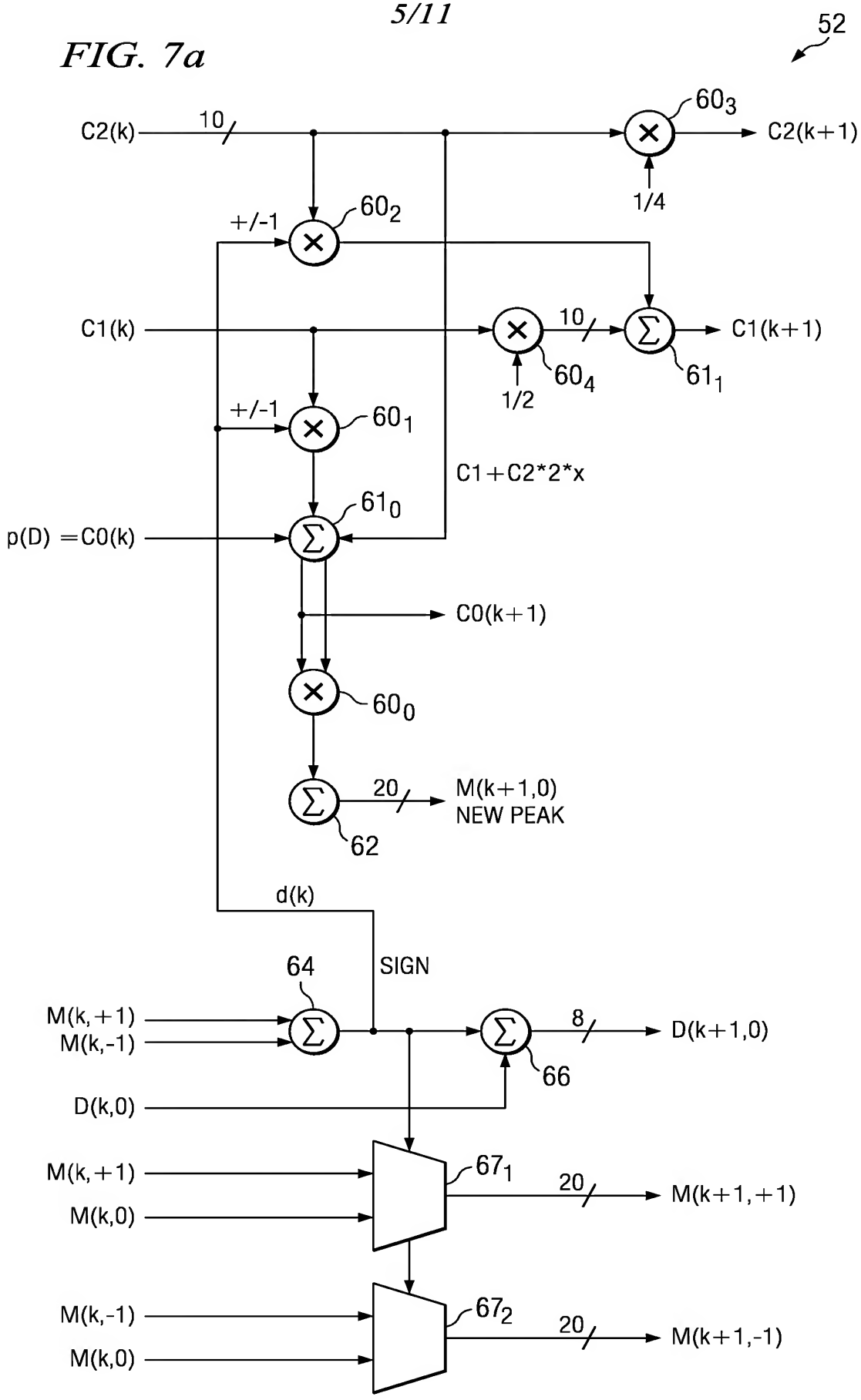
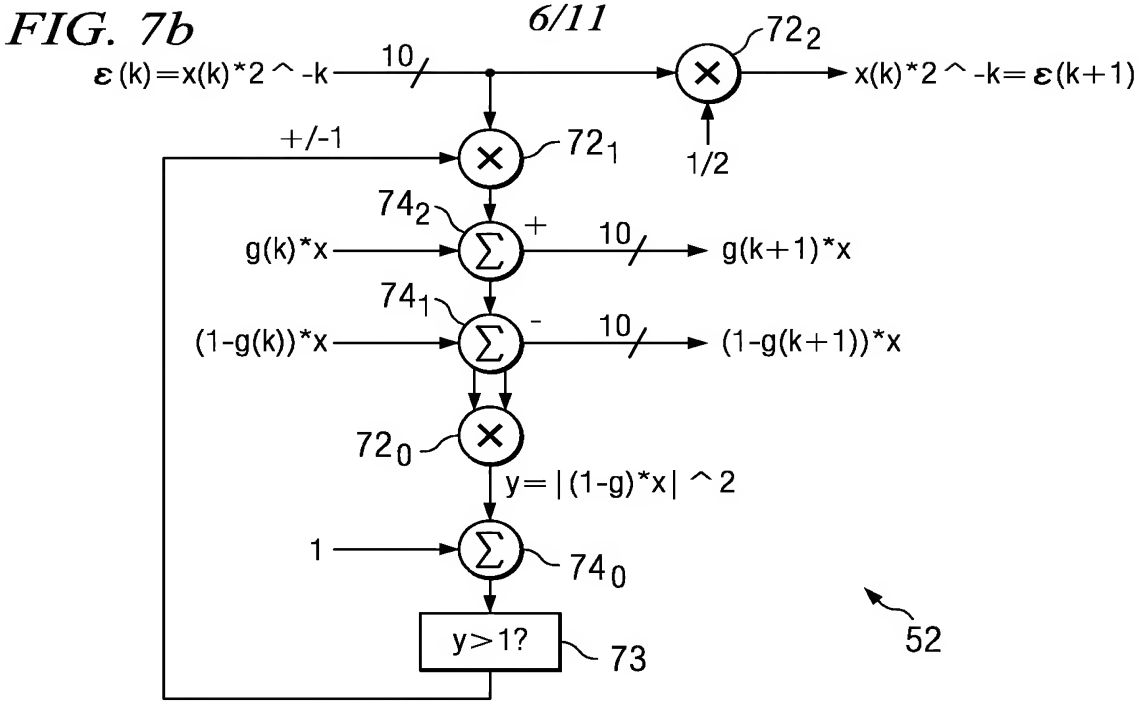

52
C2(k)
10
60_3
C2(k+1)
1/4
+/-1
60_2
C1(k)
10
C1(k+1)
60_4
61_1
1/2
+/-1
60_1
C1+C2*2*x
61_0
p(D) =C0(k)
C0(k+1)
60_0
20
M(k+1,0)
NEW PEAK
62
d(k)
64
SIGN
M(k,+1)
M(k,-1)
8
D(k+1,0)
66
D(k,0)
M(k,+1)
M(k,0)
67_1
20
M(k+1,+1)
M(k,-1)
M(k,0)
67_2
20
M(k+1,-1)

FIG. 7b


ε(k)=x(k)*2^-k
10
72 2
x(k)*2^-k=ε(k+1)
+/-1
72 1
1/2
74 2
+
g(k)*x
10
g(k+1)*x
74 1
-
(1-g(k))*x
10
(1-g(k+1))*x
72 0
y=|(1-g)*x|^2
1
74 0
y>1?
73
52

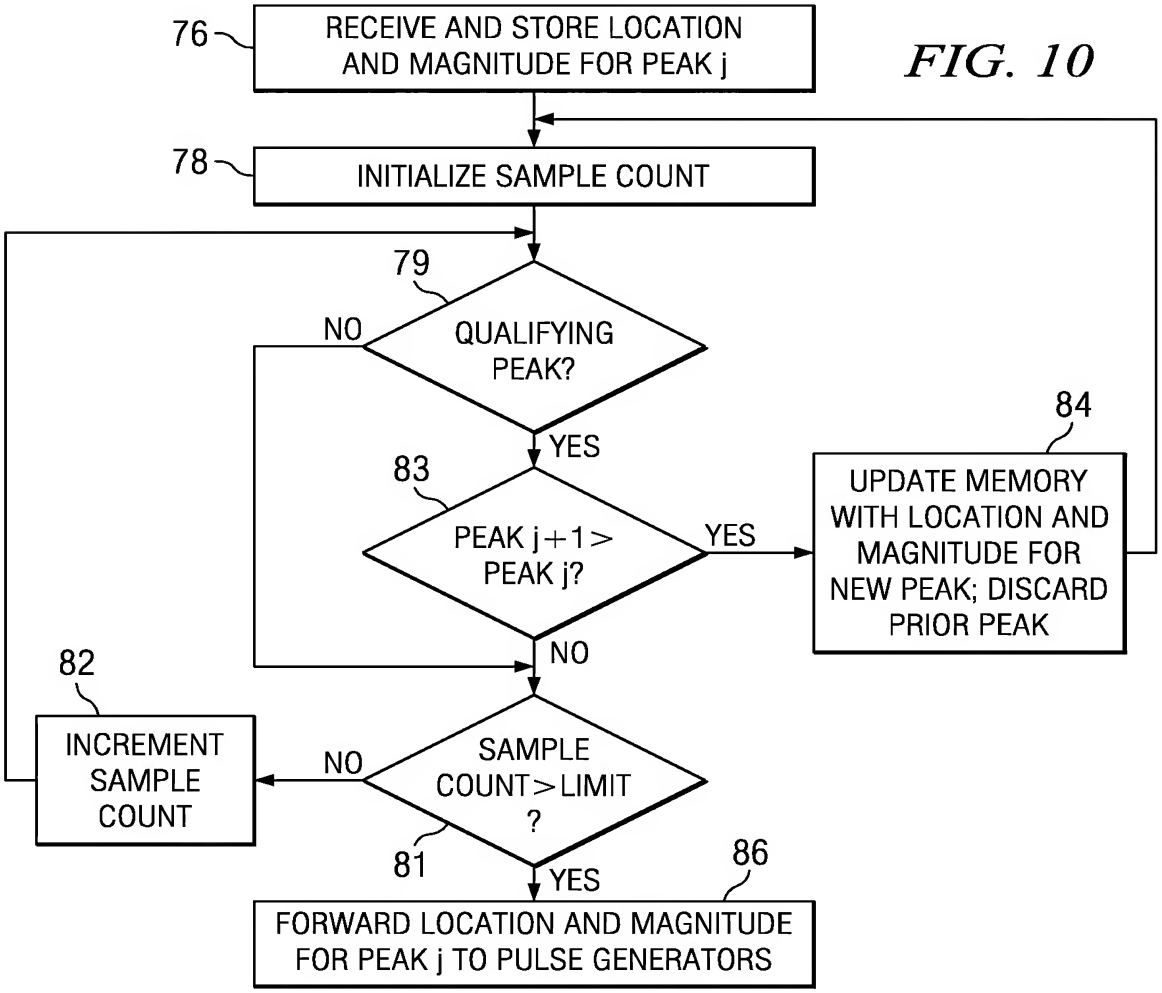

76
RECEIVE AND STORE LOCATION AND MAGNITUDE FOR PEAK j
78
INITIALIZE SAMPLE COUNT
79
QUALIFYING PEAK?
NO
YES
83
PEAK j+1> PEAK j?
YES
84
UPDATE MEMORY WITH LOCATION AND MAGNITUDE FOR NEW PEAK; DISCARD PRIOR PEAK
NO
82
INCREMENT SAMPLE COUNT
NO
SAMPLE COUNT>LIMIT ?
81
YES
86
FORWARD LOCATION AND MAGNITUDE FOR PEAK j TO PULSE GENERATORS

FIG. 10

FIG. 8B

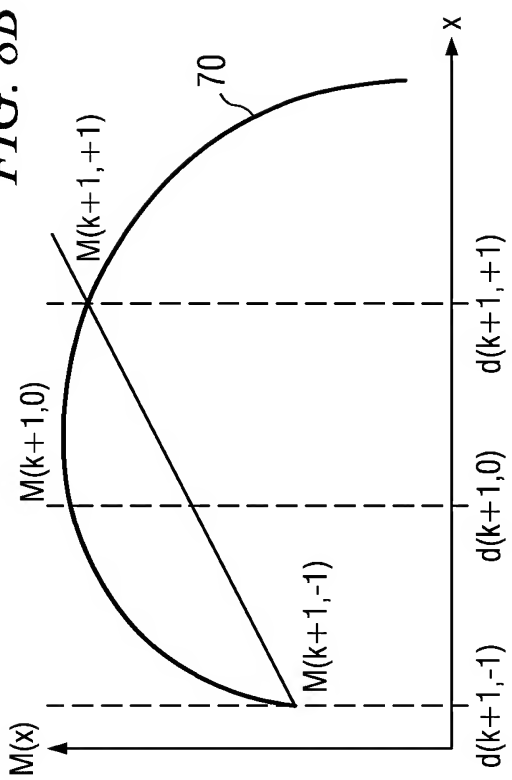


FIG. 8D

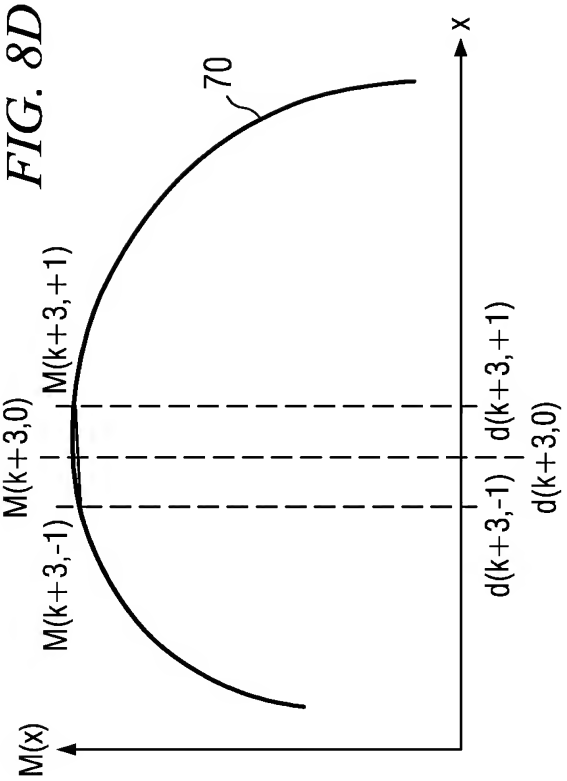


FIG. 8A

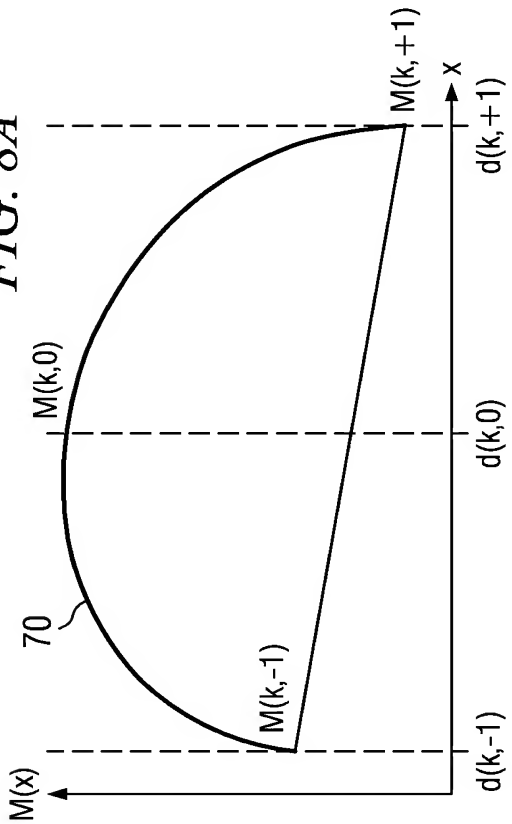


FIG. 8C

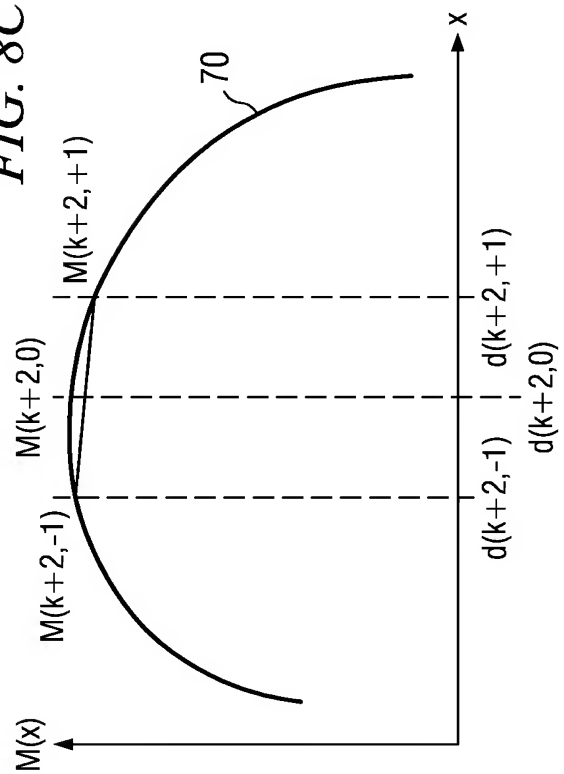


FIG. 9a

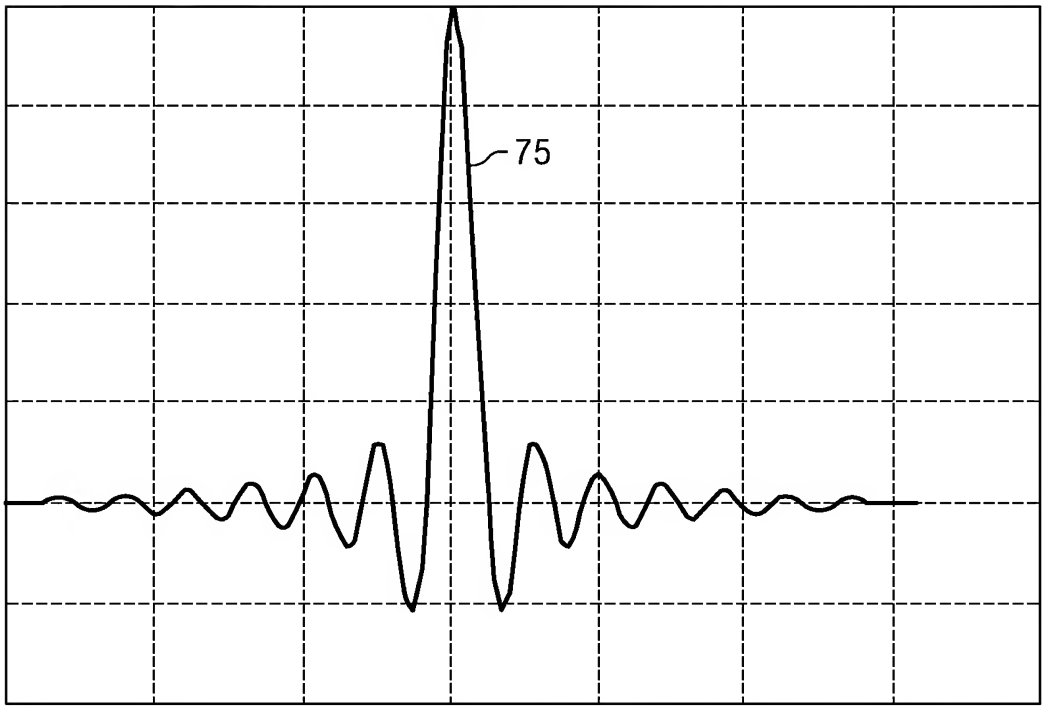
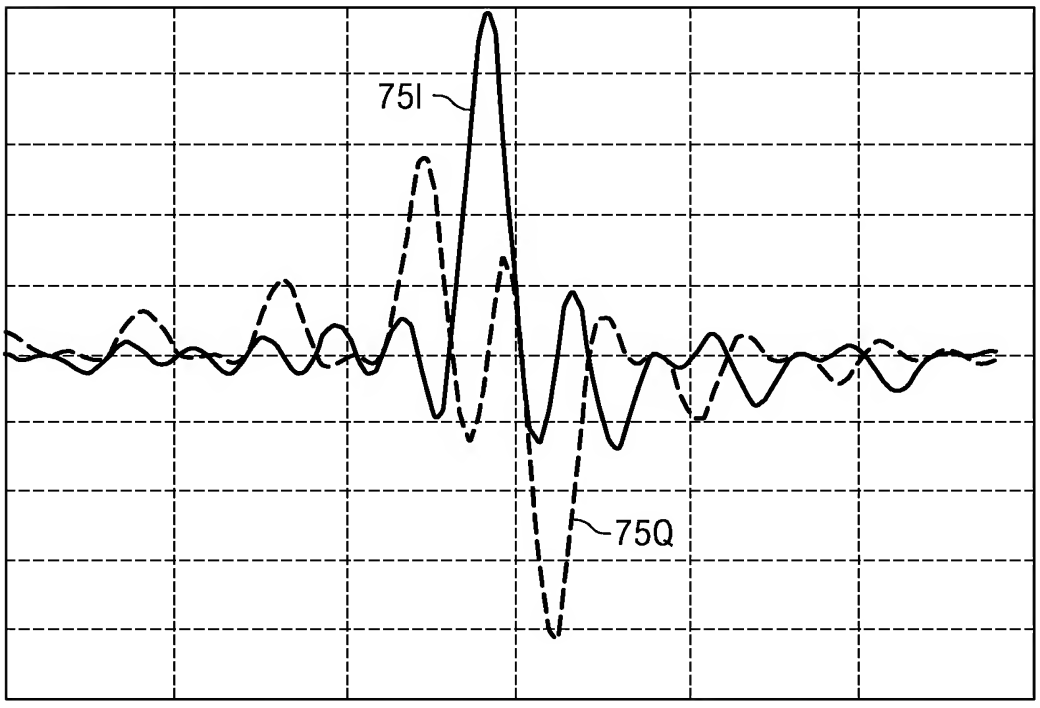


FIG. 9b



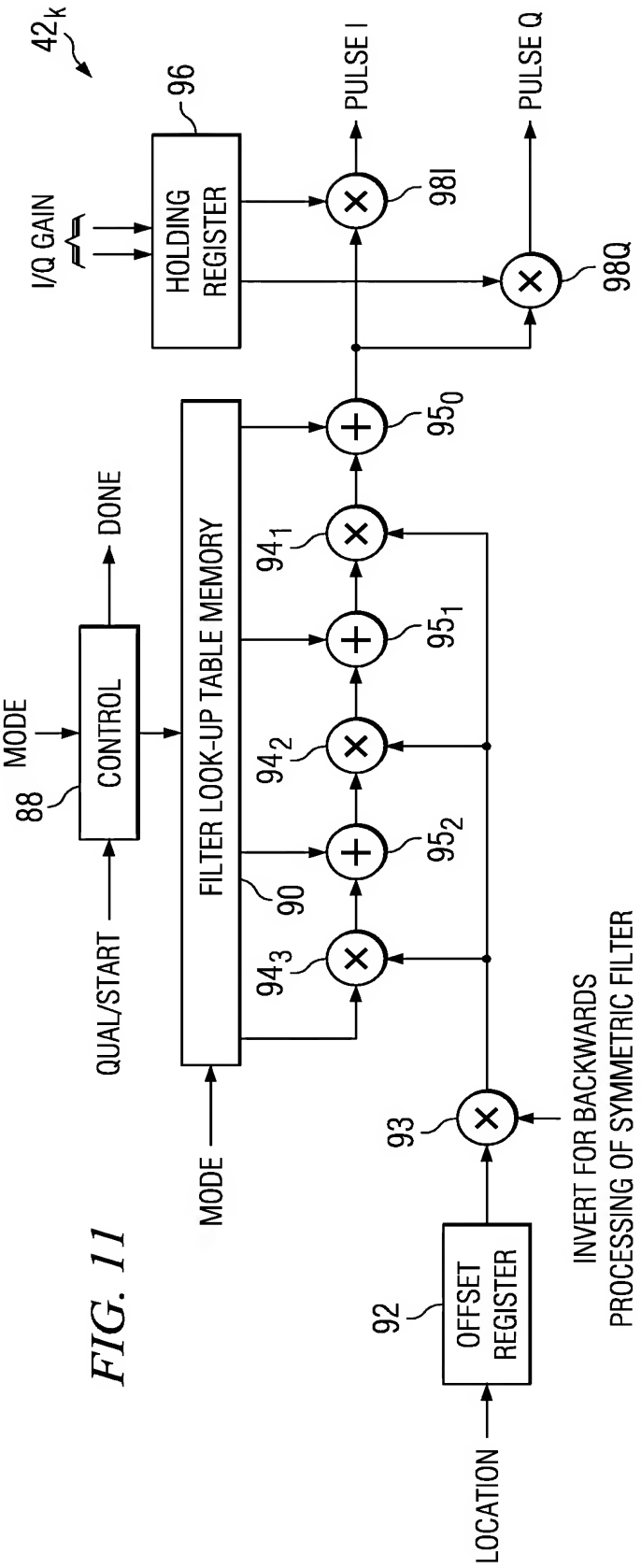

42_k
I/Q GAIN
96
HOLDING REGISTER
PULSE I
PULSE Q
98I
98Q
95_0
95_1
95_2
94_1
94_2
94_3
88
MODE
CONTROL
DONE
QUAL/START
FILTER LOOK-UP TABLE MEMORY
90
MODE
93
92
OFFSET REGISTER
LOCATION
INVERT FOR BACKWARDS PROCESSING OF SYMMETRIC FILTER

FIG. 11

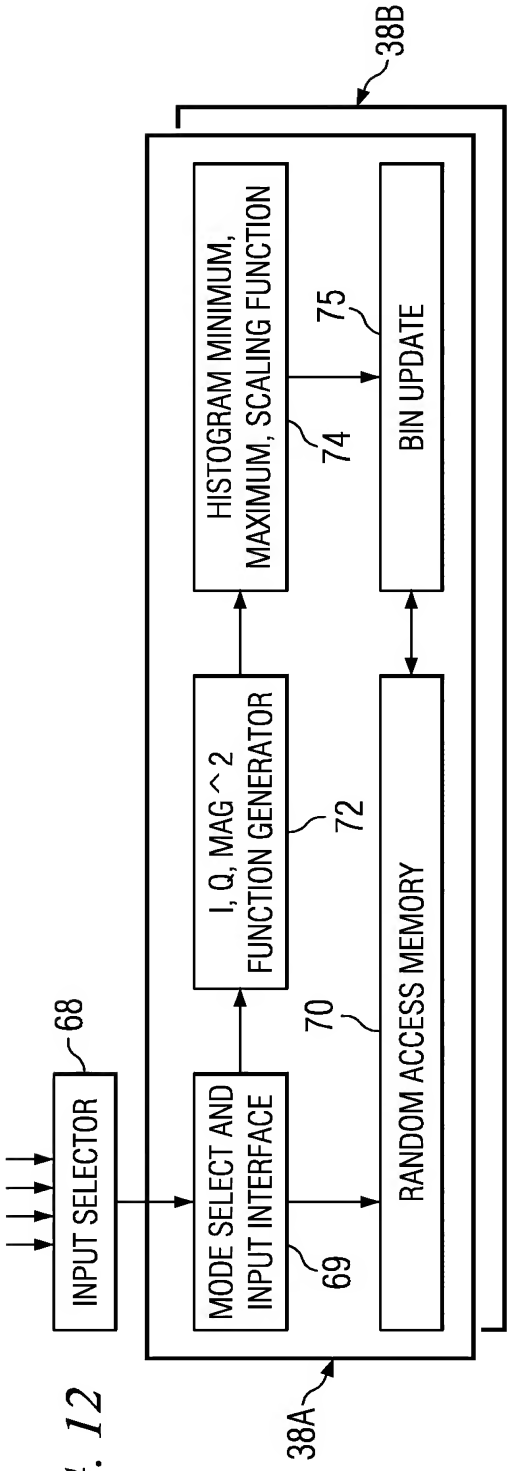

38B
68
INPUT SELECTOR
MODE SELECT AND INPUT INTERFACE
69
I, Q, MAG ^ 2 FUNCTION GENERATOR
72
70
RANDOM ACCESS MEMORY
HISTOGRAM MINIMUM, MAXIMUM, SCALING FUNCTION
74
75
BIN UPDATE
38A

FIG. 12

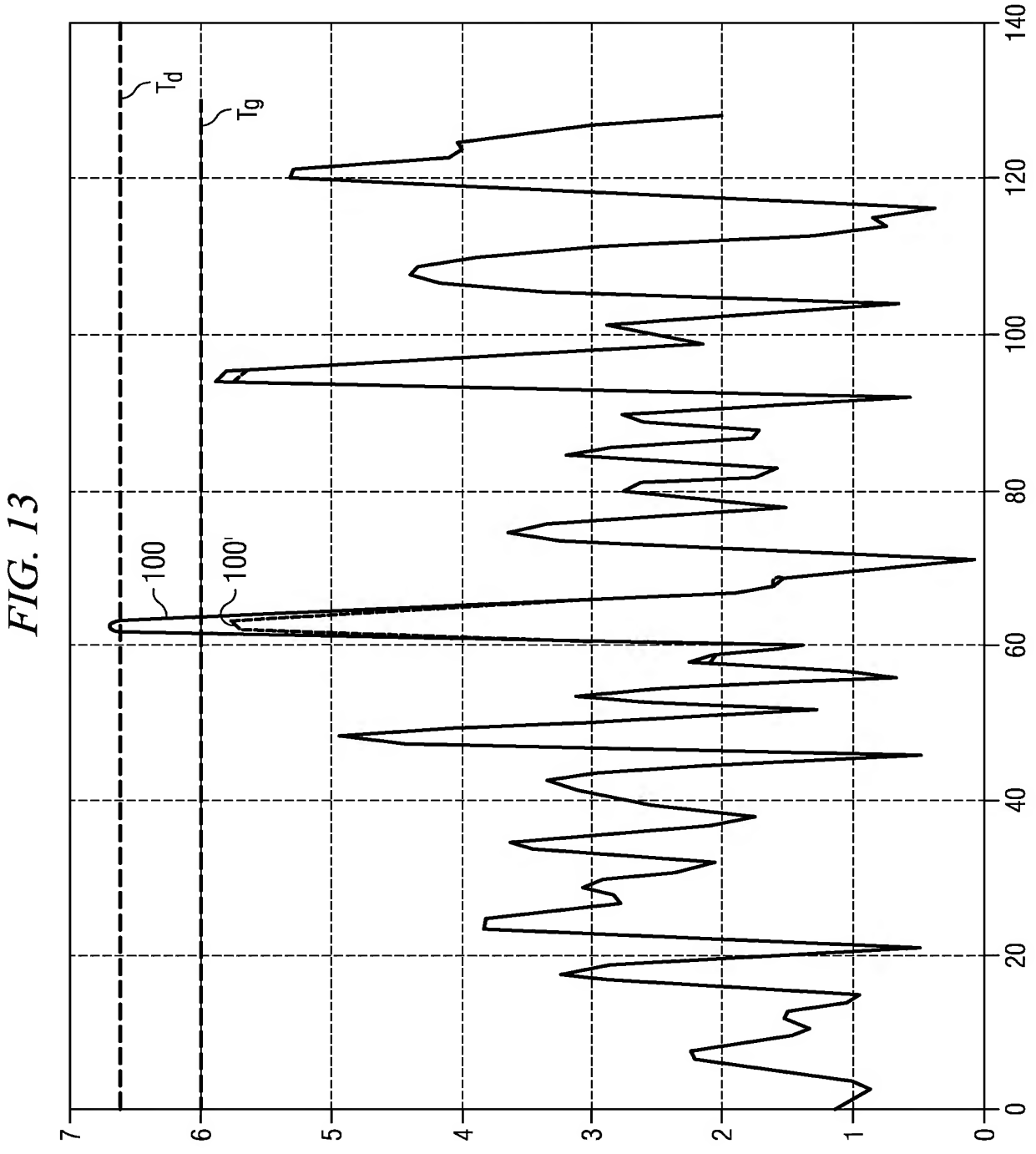


FIG. 13

FIG. 14a

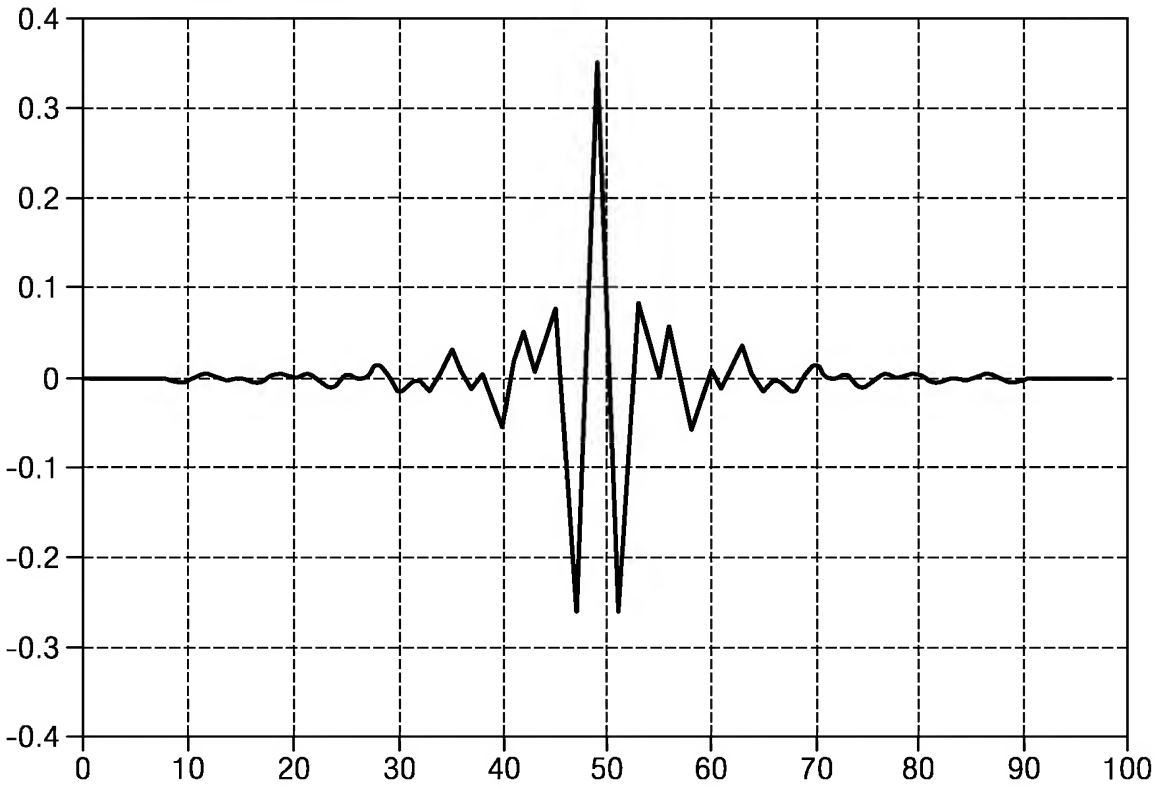
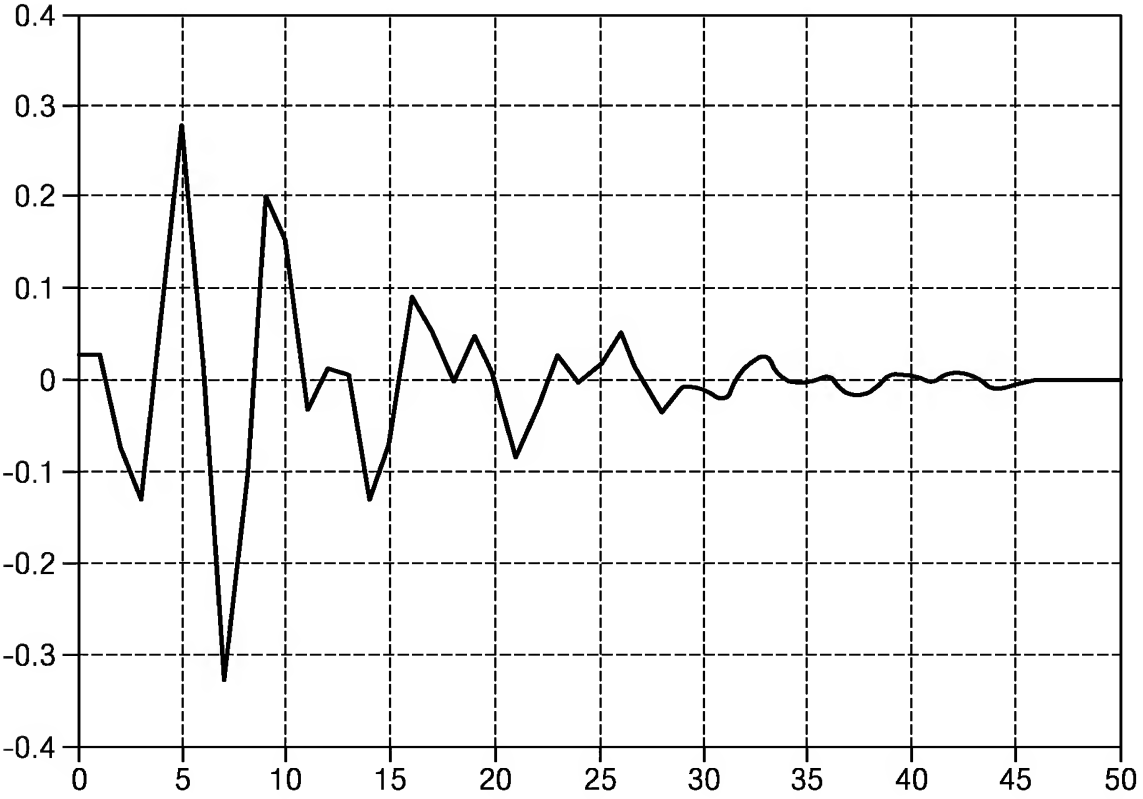



FIG. 14b